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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/918,194	08/21/97	NATHASINGH	D 30-4358(4710)

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MM91/0926

EXAMINER

NGUYEN, T

ART UNIT

PAPER NUMBER

2832

DATE MAILED:

09/26/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.  
08/918,194

Applicant(s)  
Nathasingh et al.

Examiner  
Tuyen T. Nguyen

Group Art Unit  
2832



☒ Responsive to communication(s) filed on Jul 25, 2000

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-9 and 14-26 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-9 and 14-26 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 7-9, 14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsen [US 3,538,474] in view of Klappert et al. [US 5,063,654].

Regarding claim 1, Olsen discloses a transformer core comprising a plurality of segments of metal strips, said strip each having ends that are *overlap and underlap contact forming an interlock* comprising at least one packet of said strips having edges. [see figure 4]

Regarding claim 2, Olsen discloses a core segment comprising a plurality of packets of cut metal strips, said strips each having ends forming an overlap and underlap interlocking joint, and said strips each having edges. [see figure 4]

Regarding claims 3-5, Olsen discloses each packet comprises a plurality groups of cut amorphous metal strips arranged in a step-lap joint [see figures 4-6] and having a C segment construction.

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Regarding claim 7, Olsen discloses the edges of each of said segments are coated with a bonding material that protects said edges and provides said segment with increased mechanical strength.

Regarding claim 8, Olsen discloses the segments form a core having a joint region and said coating applied to surface area of the core.

Regarding claim 9, Olsen discloses each of said packets has a plurality of joint ends support separately for assembly into a finished transformer core.

Regarding claim 14, Olsen discloses a transformer core comprising two C segments.

Regarding claim 19, Olsen discloses the core has a joint region and a binding material is applied to said joint region to maintain contact between segments therein.

Olsen discloses the instant claimed invention except for the metal strips being formed of an amorphous metal.

Klappert et al. discloses packets of amorphous metal strips for transformer-core manufacture.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use amorphous metal for the strips of Olsen, as taught by Klappert et al., for the purpose of providing a homogeneous material for the strips of the transformer-core.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olsen in view of Klappert et al. as applied to claim 2 above, and further in view of Lee et al. [US 5,134,771].

Olsen as modified discloses the instant claimed invention except for the segment have been annealed and edge coating with bonding material. Lee et al teaches utilizing annealing and edge

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coating with bonding material to the segment for the purpose of strengthening the core segment. It would have been obvious to one having ordinary skill in the art at the time the invention was made to anneal and edge coat with bonding material to the core segment of Olsen as modified, as taught by Lee et al., for the purpose of strengthening the core segment.

4. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsen in view of Klappert et al.

Regarding claims 15-18, Olsen as modified discloses the instant claimed invention except for number of C, I, and straight segments. It would have been an obvious matter of design choice to modify the transformer core of Olsen as modified into form of shell-type or three leg core for three phase transformer by forming different C, I, and straight segments together.

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olsen in view of Klappert et al. as applied to claim 1 above and further in view of Granfield [US 2,465,798].

Olsen as modified discloses the instant claimed invention except for the strips have varying widths arranged to provide a cruciform shape cross section. Grandfield teaches utilizing strips have varying widths arranged to provide a cruciform shape cross section. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the strips have varying widths arranged to provide a cruciform shape cross section, as taught by Grandfield, in Olsen's unit as modified for the purpose of providing the advantage of assembling the round coil and maximizing the coil space fill factor.

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6. Claims 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsen in view of Klappert et al..

Olsen as modified discloses the instant claimed invention except for the core is not housed in an oil filled or dry-type transformer, a distribution transformer, a power transformer, and used in a voltage conversion apparatus. It would have been an obvious matter of design choice to house the core of Olsen as modified in an oil filled or dry-type transformer, a distribution transformer, a power transformer, and used in a voltage conversion apparatus, since applicant has not disclosed that housing the core in an oil filled or dry-type transformer, a distribution transformer, a power transformer, and used in a voltage conversion apparatus solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the core of Olsen being use as an electric induction apparatus.

7. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsen in view of Klappert et al. as applied to claims 1 and 2 above and further in view of Ames et al. [US 4,450,206].

Olsen as modified discloses the instant claimed invention except for the strips having a composition defined by the formula  $M_{70-80}Y_{5-20}Z_{0-20}$ . Ames et al. teaches utilizing the amorphous metal strip having a composition defined by the formula MYZ where the atom percent is in the range of the claimed invention (see TABLE I). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the amorphous metal strip of Ames into Olsen's unit

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as modified so the core segments can be suitable for use in voltage conversion and energy storage applications

***Response to Arguments***

8. Applicant's arguments filed 7/27/00 have been fully considered but they are not persuasive.

Applicant argues:

[1] Olsen does not show the overlap/underlap design.

[2] Amorphous metal was not known at the time of Olsen showing of the interlock design.

The limitations of the metal used by Olsen would yield gaps in the final design and cause "unacceptable" magnetic losses.

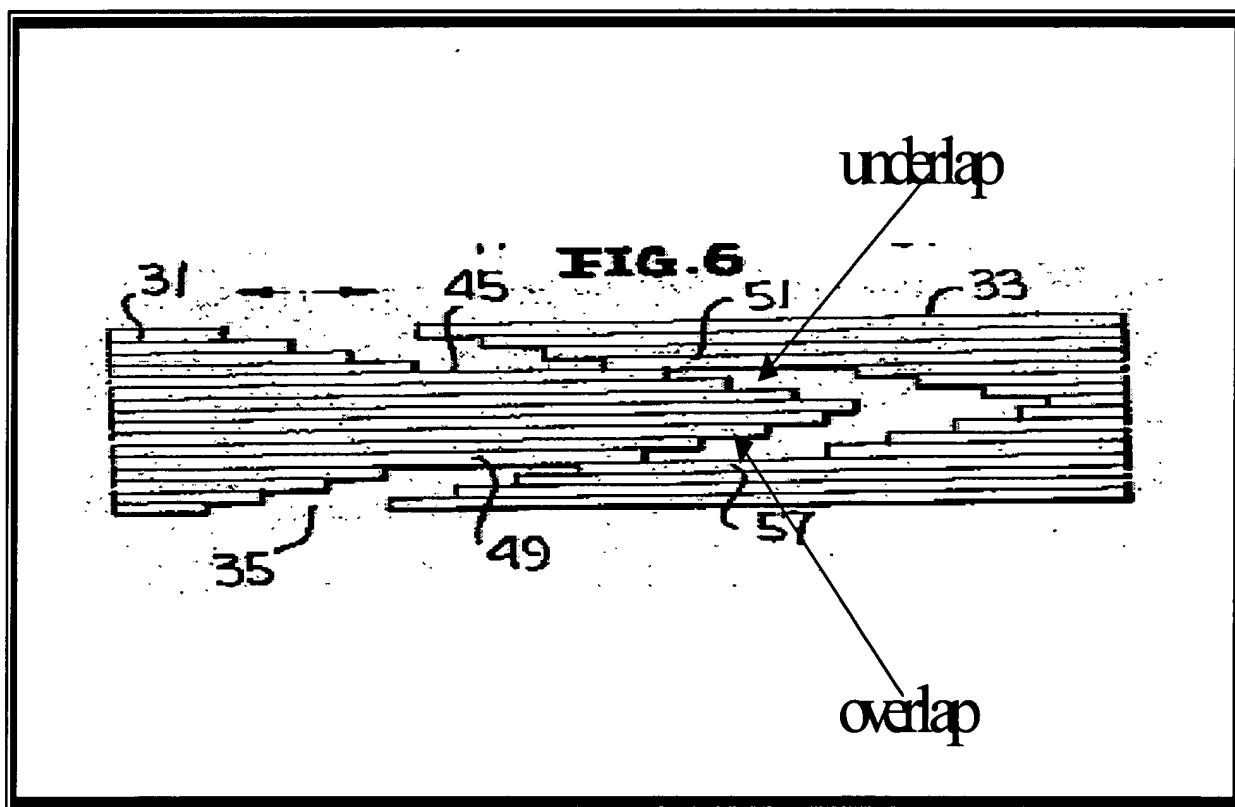
[3] It would have been unlikely that a skilled artisan would use the design of Klappert et al. to modify Olsen.

The examiner disagrees.

Regarding [1]: Examiner shows [see below]

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Regarding [2]: Klappert et al. shows the use of amorphous metal in a lamination joint structure of a core. Applicant has not claimed any structure, i.e. the “continuous magnetic loop” without gaps, nor has examiner considered such limitations, using the benefits of an amorphous metal.



The design of applicant, see applicant figures 8 and 9, also has gaps.

Regarding [3]: amorphous metal exhibit desired magnetic properties. Olsen's joint yield strength. A skilled art artisan would have been motivated to use new materials exhibiting superior magnetic properties for the joint and core of Olsen.



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***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tuyen T. Nguyen whose telephone number is (703) 308-0821.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael Gellner, can be reached at (703)308-1721. The fax number for this Group is (703)305-1341.

Any inquiry of a general nature or relating to the status of this application of proceeding should be directed to the Group receptionist whose telephone number is (703)308-0956.

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TTN

Tuyen T. Nguyen

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September 24, 2000

A handwritten signature in black ink, appearing to read "M. L. Gellner". The signature is fluid and cursive, with the first name "M." and last name "Gellner" clearly distinguishable.

Michael L. Gellner  
Supervisory Patent Examiner  
Technology Center 2800